

Claims

1. A method for identifying compounds that have the ability of modulating sister chromatid separation in plant or animal cells, characterized in that a protease with separin-like cysteine endopeptidase activity is incubated, in the presence of the substrate(s) for its proteolytic activity and optionally its co-factor(s), with test compounds and that the modulating effect of the test compounds on the proteolytic activity of the cysteine endopeptidase is determined.
2. The method of claim 1, wherein said protease is recombinant.
3. The method of claim 1 or 2, wherein said protease is human separin.
4. The method of claim 1, wherein said substrate is a protein recombinantly produced in baculovirus in the presence of a phosphatase inhibitor.
5. The method of claim 1, wherein the substrate is human SCC1 oder a fragment or variant thereof.
6. The method of claim 5, wherein the substrate is a peptide with the amino acid sequence as set forth in SEQ:ID:NO:1 or a cleavable fragment or variant thereof.
7. The method of claim 1 or 2, wherein the protease is a plant separin.
8. The method of any one of claims 1 to 7, wherein the substrate carries a label which generates a detectable signal proportional to the amount of the cleavage product of the proteolytic activity, and wherein the signal is measured in the presence and in the absence of the test compound.
9. The method of claim 8, wherein the label is fluorescent.

10. Inhibitors of a protease with separin-like cysteine endopeptidase activity for human therapy.
11. Inhibitors of human separin for human cancer therapy.
12. The use of inhibitors of a protease with separin-like cysteine
5 endopeptidase activity for the preparation of a medicament for the treatment of cancer.
13. Inhibitors of human separin for the prevention of birth defects caused by missegregation of chromosomes in meiosis.
14. The use of inhibitors of a protease with separin-like cysteine
10 endopeptidase activity for the preparation of a medicament for the prevention of birth defects caused by missegregation of chromosomes in meiosis.
15. Pharmaceutical composition, containing as active ingredient an inhibitor of human separin.
- 15 16. Inhibitors of plant separin for increasing the ploidy of plant cells.

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